

Patent Claims

1. Flakes comprising a non-chiral liquid crystal material.
- 5 2. Flakes according to claim 1, characterized in that the liquid crystal material is a nematic or smectic liquid crystal material.
3. Flakes according to claim 1 or 2, characterized in that the liquid crystal material is polymerised, crosslinked or vitrified.
- 10 4. Flakes according to at least one of claims 1 to 3, characterized in that they comprise two or more layers of liquid crystal material.
- 15 5. Flakes according to at least one of claims 1 to 4, characterized in that the liquid crystal material has uniform orientation.
6. Flakes according to claim 5, characterized in that the liquid crystal material has planar orientation.
- 20 7. Flakes according to at least one of claims 1 to 6, characterized in that they are platelet shaped.
8. Flakes according to claim 7, characterized in that they have lateral dimensions of from 10 to 2000 microns and a thickness of from 0.5 to 5 microns.
- 25 9. Process of preparing flakes according to at least one of claims 1 to 8, by providing an achiral polymerisable liquid crystal material onto a substrate, polymerising the material, optionally removing the polymerised material from the substrate and processing it to form flakes.
- 30 10. Ink comprising one or more types of flakes according to at least one of claims 1 to 8 dispersed in a light transmissive binder.
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11. Ink according to claim 10, characterized in that it additionally comprises one or more types of optically variable pigments.
- 5 12. Film or coating of an ink according to claim 10 or 11 provided on a substrate.
- 10 13. Use of flakes according to at least one of claims 1 to 8 or an ink according to claim 10 or 11 or a film or coating according to claim 12 for decorative or security applications, security markings or security threads, or systems of verification or authentication of documents or objects.
- 15 14. Security marking comprising flakes according to at least one of claims 1 to 8 or an ink according to claim 10 or 11 provided on a reflective substrate.
- 20 15. Document comprising a security marking according to claim 14.
- 25 16. Method of verification of a document according to claim 15 by observing said document through one or more linear or circular polarisers.
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